

Draft Tracking Marina NPS Management Measures



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Lisa Sniderman, CCC
lsniderman@coastal.ca.gov
CA Nonpoint Source Program

Tracking Marina NPS MMs

- ◆ Goal of State NPS Plan: Implement 61 MMs by 2013
- ◆ NPS Plan includes 16 MMs for Reducing NPS from Marinas & Rec Boating
- ◆ NPS Program prioritizing:
 - ◆ MM 4.1A Water Quality Assessment
 - ◆ MM 4.1G Sewage Facilities
 - ◆ MM 4.1H Waste Management Facilities
 - ◆ MM 4.3A Public Ed. And Outreach

Tracking Marina NPS MMs

◆ Indicators:

- ◆ (4.1A) Number, location of **303(d)-listed waterbodies that include marinas as a source**; number, location of **marinas assessed for water quality** baseline data, have monitoring programs;
- ◆ (4.1G) Number, location of marinas, **sewage pumpout facilities**; mobile services in the state and geographic areas supplied, number of boaters serviced at marinas;
- ◆ (4.1H) Number, location of **used oil collection facilities/waste management facilities** related to marinas, number location of **absorbent pad distribution**, absorbent pad collection centers;
- ◆ (4.3A) Number, locations of **regional clean marina/clean boating programs** in the state; number of marinas participating in programs

Conclusions

MM 4.1 A: *Number, location of 303(d)-listed waterbodies that include marinas as a source of impairment*

- ◆ 5 waterbodies specifically identify marinas & rec boating as source (Regions 6 and 9)
- ◆ Majority of marinas in CA are located in waterbodies impaired by pollutants that could be related to marinas and rec boating:
 - ◆ 28 Bays and harbors
 - ◆ 18 Estuaries
 - ◆ 59 Lakes
 - ◆ 4,347 Stream reaches
 - ◆ 33 Shorelines
 - ◆ 3 Wetlands
- ◆ Limitations of using this indicator

Conclusions

MM 4.1 A: *Number, location of marinas “assessed” for water quality baseline data, have monitoring programs*

- ◆ At least **57/643** marinas in CA have been assessed or have monitoring programs (SF Bay=34; Tahoe: ≈14)
- ◆ May be many additional assessments related to marinas:
 - ◆ Many marinas are located in waterbodies that may have water quality assessments conducted by various federal, state, regional, or local watershed programs (e.g., NOAA Mussel Watch Program data, USGS Water Resources data, Bay Protection Toxic Clean-up)
- ◆ Data limitations: only publicly available data used; data set incomplete
- ◆ Need to better understand monitoring programs and relation to marinas to better answer the question

Conclusions

MM 4.1 G: *Number, location of marinas, sewage pumpout facilities*

- ◆ Majority of marinas in CA (**60%** or 309/516) do not have pumpouts or have ability to contract a mobile service (this number differs from total number of marinas-reporting data)
- ◆ At least **32.8%** of marinas in CA (169/516) have sewage pumpout

MM 4.1 H: *Number, location of used oil collection facilities/waste management facilities related to marinas, number, location of absorbent pad distribution, absorbent pad collection centers*

- ◆ Majority of marinas in CA (**55%** or 285/516) do not distribute or collect absorbent pads (this number differs from total number of marinas-reporting data)
- ◆ At least **30%** (153/516) both distribute and collect absorbent pads
- ◆ Majority of marinas in CA (**61.2%** or 316/516) do not collect used oil
- ◆ At least **31.2%** of marinas (161/516) do collect used oil

Conclusions

MM 4.3 A: *Number, locations of regional clean marina/clean boating programs in the state*

- ◆ 5 types of programs in CA: marina-specific, local, waterbody-specific, regional, and statewide
- ◆ Marina-specific programs: 6 in CA outreach to $\approx 2,365$ boaters
- ◆ Total (not incl. statewide): **30 programs**, 272 marinas, 60,579 boaters (statewide: 3 programs, 516 marinas, 106,746 boaters)
- ◆ Need to correlate programs with marinas (e.g., where are clusters? Which marinas aren't served by programs?) and identify program focus (on which marina MMs or activities do programs focus?)

MM 4.1A: Water Quality Assessment

Indicators:

(4.1A) Number, location of **303(d)-listed waterbodies that include marinas as a source**; number, location of **marinas assessed for water quality** baseline data, have monitoring programs

MM 4.1A: Water Quality Assessment

Size distribution of marinas

Marina Size ^a	Number of Marinas	Percent of Total Marinas
10 to 50	150	29%
51 to 100	82	16%
101 to 500	233	45%
More than 500	51	10%
Total	643	100%

^a Marina size represents the total number of slips, moorings, and dry storage berths at the marina. 127 facilities have fewer than 10 slips, moorings, and dry storage berths and therefore aren't considered "marinas"

Number of marinas in each region.

Region	Number of Marinas	Percent of Region
Northern CA	316	61%
Central CA	45	9%
Southern CA	155	30%

MM 4.1A: Water Quality Assessment

Number of marinas in each Regional Water Quality Control

Regional Water Quality Control Board	Number of Marinas	Percent of Total
Region 1 - North Coast	24	5%
Region 2 - San Francisco Bay	93	18%
Region 3 - Central Coast	18	3%
Region 4 - Los Angeles	61	12%
Region 5 - Central Valley	194	38%
Region 6 - Lahontan	33	6%
Region 7 - Colorado River	8	2%
Region 8 - Santa Ana	29	6%
Region 9 - San Diego	56	11%

MM 4.1A:

Water Quality Assessment

Number of 303(d)-listed waterbodies in CA impaired by pollutants related to marinas and recreational boating^a by waterbody type

Type of Waterbody	Number Impaired
Bays and harbors	28
Estuaries	18
Lakes	59
Stream reaches	4,347
Shorelines	33
Wetlands	3

^a Pollutants typically associated with marinas and recreational boating: aluminum, arsenic, bacteria, cadmium, chromium, copper, dissolved oxygen, iron, mercury, nickel, nitrate, nitrite, nitrogen, oil, phosphorus, polycyclic aromatic hydrocarbons, tributyl tin, and zinc.

MM 4.1A:

Water Quality Assessment

303(d)-listed waterbodies with marinas and recreational boating specifically identified as a source of impairment

Waterbody Type	Waterbody Name	Pollutants Causing Impairment	RWQCB	TMDL Priority
Lake	Bridgeport Reservoir	Nitrogen and Phosphorus	6	Medium
Lake	Eagle Lake (Lassen County)	Nitrogen and Phosphorus	6	Low
Lake	Tahoe, Lake	Nitrogen and Phosphorus	6	Medium
Shoreline	San Diego Bay Shoreline, Chula Vista Marina	Bacteria	9	Low
Harbor	Dana Point Harbor ^c	Bacteria	9	Medium

^c Impairment located at Baby Beach

MM 4.1A: Water Quality Assessment

Number, location of marinas in CA assessed for water quality, have monitoring programs

- ◆ At least 57/643 marinas in CA have been assessed or have monitoring programs (SF Bay=34; Tahoe: ≈14)
- ◆ WQ monitoring programs in CA vary
 - ◆ Different scopes (statewide, region-wide, county-wide, city-wide, watershed; include point locations, marinas, etc.)
 - ◆ Different locations in the state
 - ◆ Different frequencies (one-time vs. continuous)
 - ◆ Different parameters are monitored

MM 4.1A:

Water Quality Assessment

Examples of studies, monitoring programs particular to marinas in CA:

Harbor Monitoring Program for San Diego Region	Sediment (chemistry, benthic community, and toxicity), fish (tissue), and water quality (chemistry, toxicity, and general parameters)	1 watershed
Lahontan Region Industrial Stormwater Permit for Marinas	Stormwater samples for pH, TSS, oil and grease, specific conductance, turbidity, total nitrogen, and total phosphorus	1 watershed (≈14 marinas)
Los Angeles Region Sediment Study	Sediment sampling for metals, trace organics, toxicity, benthic macroinvertebrates, and bioaccumulation	2 cities, 3 marinas, and 13 waterbodies
San Diego Bay Marinas Copper Sampling	Copper	2 cities, 5 marinas, 2 waterbodies, 8 other locations
San Francisco Bay Regional Board	Copper	30 marinas
Trinidad Rancheria Marina Monitoring	Petroleum hydrocarbons, heavy metals, bacteria	1 marina
San Francisco Bay Marina Water Quality Project	Sediment sampling for trace metals (copper, zinc, chromium, lead, arsenic, cadmium), and PAHs. Water quality sampling for dissolved oxygen, temperature, turbidity, pH, salinity	1 waterbody (4 marinas-one-time study)

MM 4.1G Sewage Facilities:

Number, location of marinas, sewage pumpout facilities

Availability of sewage pumpout service at marinas or via mobile services in CA

Availability of Sewage Pumpout Service	Number of Marinas	Percent of Total
Both the marina and the municipality offer service ^d	9	1.7%
Service offered by the marina only	169	32.8%
Service offered by the municipality only	22	4.3%
Service not offered by either the marina or municipality ^e	309	59.9%
No data	7	1.4%

^d Pete's Harbor has mobile sewage pumpout capabilities.

^e Trimmer Marina and Campground and Donner Lake Marina have sewage pumpout capabilities but are not currently implementing the management practice.

MM 4.1H: Waste Management Facilities:
Number, location of used oil collection;
number, location of absorbent pad distribution,
collection centers

Availability of absorbent pad distribution and/or collection at marinas

Absorbent Pad Program Availability	Number of Marinas	Percent of Total
Both distribute and collect	153 ^a	30%
Distribute but don't collect	54 ^b	10%
Collect but don't distribute	14 ^c	3%
Neither distribute nor collect	285	55%
No data	10	2%

Availability of used oil collection service at marinas or via mobile services

Used Oil Collection	Number of Marinas	Percent of Total Marinas
Both the marina and the municipality offer service	7	1.4%
Service offered by the marina only	161	31.2%
Service offered by the municipality only	22	4.3%
Service not offered by either the marina or municipality	316	61.2%
No data	10	1.9%

MM 4.1H:

Waste Management Facilities

Availability of bilge cleanout service at marinas or via mobile services

Availability of Bilge Cleanout Service	Number of Marinas	Percent of Total
Both the marina and the municipality offer bilge cleanout service	1	0.2%
Bilge cleanout service offered by the marina only	20	3.9%
Bilge cleanout service offered by the municipality only	20	3.9%
Bilge cleanout service not offered by either the marina or municipality	465	90.1%
No data	10	1.9%

MM 4.3A Public Ed. And Outreach:

Number, locations of regional clean marina/ clean boating programs in the state

Program Type	No. of Programs	No. of Marinas	No. of Boaters	Program Name(s)	No. of Marinas	No. of Boaters
Marina-Specific	6	6	2,365	Big Bear Marina	1	220
				Grand Marina and Park Street Landing	1	423
				Lake Don Pedro Marina	1	460
				Pittsburg Marina	1	534
				Port San Luis Harbor District	1	118
				Sunroad Resort Marina	1	610
Local	3	7	523	City of Folsom Lake	1	20
				City of Vallejo	1	144
				Port Of Oakland	5	359
Waterbody-Specific	10	134	34,643	Morro Bay Harbor Department	3	217
				Port of San Diego	22	5,979
				Richardson Bay Regional Agency	12	2,855
				San Francisco Baykeepers and Pegasus Project	19	8,767
				San Francisco Estuary Project	54	9,393
				Tahoe Regional Planning Agency	2	726
				Heal The Bay, Santa Monica Baykeeper, and Santa Monica Bay Boater Education	22	6,706

MM 4.3A Public Ed. And Outreach

Description of management measure topics, target audiences, and materials produced for clean boating/clean marina public education programs if known.

Name and Location	Management Measures	Target Audiences		Type of Materials
		Marinas	Boates	
Marine Specific Programs				
Big Bear Marina Big Bear Lake	Waste Management Facilities, Solid Waste Control, Liquid Material Control, Petroleum Control		X	Printed material
Grand Marina and Park Street LandingOakland	Sewage Facilities, Waste Management Facilities, Solid Waste Control, Liquid Material Control, Boat Cleaning and Maintenance, Maintenance of Sewage Facilities, Boat Operation		X	Training
Lake Don Pedro Marina, La Grange	Storm Water Runoff, Fueling Station Design, Sewage Facilities, Waste Management Facilities, Solid Waste Control, Liquid Material Control, Boat Cleaning and Maintenance		X	Signage, printed material
Pittsburg Marina, Pittsburg	Sewage Facilities, Waste Management Facilities, Solid Waste Control, Liquid Material Control, Petroleum Control		X	Signage, printed material, training newsletter
Port San Luis Harbor District, Avila Beach	Unknown		X	Unknown
Sunroad Resort Marina, San Diego	Storm Water Runoff, Sewage Facilities, Waste Management Facilities, Solid Waste Control, Liquid Material Control, Boat Cleaning and Maintenance, Maintenance of Sewage Facilities		X	Signage, printed material, training newsletter

Conclusions

(see previous slides)

- MM 4.1A Water Quality Assessment
- MM 4.1G Sewage Facilities
- MM 4.1H Waste Management Facilities
- MM 4.3A Public Ed. And Outreach

Questions for the TMC

- ◆ Do indicators make sense?
- ◆ Are there other/better indicators we should be considering?
- ◆ Are there other data sources you think should be included?
- ◆ Any thoughts on overcoming some of highlighted limitations?
- ◆ Any other thoughts on tracking strategy?
- ◆ Questions?